

09/744159

J602 Rec'd PCT/PTO 22 JAN 2001

EP 009905011

S 2156

me hue

Claims:

A2

1. Filter module with layers of filter layers (1, 1a - d) of deep bed filter material, between which there are spacer elements of draining layers (5, 5a, 5b), the draining layers (5, 5a, 5b) and the filter layers (1, 1a - d) being stacked on one another without gaps, and the draining layers (5, 5a, 5b) being sealed on alternate sides to the filtrate/unfiltered material space by means of sealing elements (6), characterized in that the draining layers (5, 5a, 5b) on the transition which is the other one at the time to the filtrate/unfiltered material space have flow elements (8), and that the sealing elements (6) and/or the flow elements (8) have means (12) for mutual connection.

2. Filter module as claimed in claim 1, wherein at least two filter layers (1, 1a - d) with different degrees of separation lie on top of one another.

3. Filter module as claimed in claim 1, wherein at least two filter layers (1, 1a - d) with the same degree of separation lie on top of one another.

4. Filter module as claimed in one of claims 1 to 3, wherein the filter layers (1, 1a - d) are adsorptively acting filter layers.

5. Filter module as claimed in one of claims 1 to 4, wherein differently adsorptively acting materials are worked into the filter layers (1, 1a - d).

6. Filter module as claimed in one of claims 1 to 5, wherein the filter layers (1, 1a - c) have sealing elements (6) which point towards the filtrate space (3).

7. Filter module as claimed in one of claims 1 to 6, wherein the sealing elements (6) are moldings.

8. Filter module as claimed in one of claims 1 to 7, wherein several sealing elements (6) which adjoin one another are made in one part or are joined to one another leakproof.

9. Filter module as claimed in one of claims 1 to 8, wherein the sealing elements (6) on their end faces have structures (7) which fit into the layer which is adjacent at the time.

10. Filter module as claimed in one of claims 1 to 9, wherein the flow elements (8) have a massive frame with holes (9) or grooves (10) which lie in the plane of the draining layer (5, 5a, 5b).

11. Filter module as claimed in one of claims 1 to 10, wherein the draining layer (5, 5a, 5b) has a plastic nonwoven.

12. Filter module as claimed in one of claims 1 to 11, wherein the draining layer (5, 5a, 5b) is made in one piece with the sealing element (6) and the flow element (8).

13. Filter module as claimed in one of claims 1 to 12, wherein these connection means are clips (13) and catch projections (14).

14. Filter module as claimed in one of claims 1 to 13, wherein the filter layers and the draining layers (5, 5a, 5b) are planar.